REMARKS

I. Detailed Action

A. Status of Application

Applicants acknowledge claims 9-11 and 20-22 are withdrawn from consideration. Applicants further acknowledge the Terminal Disclaimer filed on May 16, 2003 has been reviewed and accepted. Applicants further acknowledge the Terminal Disclaimer has been recorded.

B. Claim Objections

Claim 8 stands objected to for omission of the word degrading after "fumonisin" in line 2. Applicants have amended claim 8, thereby alleviating this objection. Applicants thank the Examiner for pointing out this inadvertent mistake.

II. Claim Rejections – 35 U.S.C. § 112, First Paragraph

A. New Matter

Claims 1-8 stand rejected under 35 U.S.C. § 112, first paragraph, for containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the Applicants, at the time the application was filed, had possession of the claimed invention. The Examiner notes that support for the "200 contiguous bases" cannot be found in the originally filed specification or claims and is thus considered new matter. The Examiner requests that Applicants either point to support for the phrase in the originally filed specification or claims or deletes the phrase.

Applicants respectfully traverse this rejection. As taught in the specification, "the present invention relates to an isolated nucleic acid comprising a member selected from the group consisting of . . . (b) a polynucleotide comprising at least 20 contiguous bases of the

polynucleotides of the present invention . . ." (specification, p. 4). The specification thus supports the phrase "200 contiguous bases" since the language "at least 20 contiguous bases" from the specification would encompass a polynucleotide having anywhere from 20 contiguous bases up through the full number of the sequence. However, in the interests of furthering prosecution Applicants have amended the claims, removing reference to 200 contiguous bases, thereby alleviating this rejection.

B. Enablement

Claims 1-8 and 12-19 stand rejected under 35 U.S.C. § 112, first paragraph, because the specification does not reasonably provide enablement for any polynucleotide comprising at least 200 contiguous bases of SEQ ID NO: 35, any polynucleotide that hybridizes thereto under the defined high stringency conditions and encoding a protein having fumonisin degrading activity, and transformed plants/plant cells/seed comprising said polynucleotide. The Examiner states that the Applicants have not taught that every 200 contiguous bases of SEQ ID NO: 35 has the ability to encode a functional polypeptide having fumonisin degrading activity, and that it can be used for the production of transgenic plants having resistance against fumonisin producing fungi. The Examiner further states that Applicants have not provided guidance for a polynucleotide which hybridizes to SEQ ID NO: 35 under Applicant's high stringency conditions and which still encodes APAO.

Applicants respectfully traverse this rejection. The test for enablement under § 112, first paragraph, is "whether or not the specification contains a sufficiently explicit disclosure to enable one having ordinary skill in the relevant field to practice the invention claimed therein without the exercise of undue experimentation." Ex Parte Forman, 230 U.S.P.Q. 546 (Bd. Pat. App. & Int'f 1986). The specification provides clear guidance as to how other nucleotide sequences

which encode APAO might be used in accordance with this invention. As noted in the specification:

> "It is recognized that the sequences of the invention can be used to isolate corresponding sequences in other organisms. Methods such as PCR, hybridization, and the like can be used to identify sequences having substantial sequence similarity to the sequences of the invention. . . . Coding sequences isolated based on their sequence identity to the entire fumonisin degrading coding sequences set forth herein or to fragments thereof are encompassed by the present invention." (specification, p. 23)

The guidance provided by the specification for identifying nucleotide sequences which are encompassed by the invention is clear and well understood by those skilled in the biotechnology field. The amount of work to identify and ascertain these sequences is low. The nucleotides which encode for this protein would then be easily ascertainable using methods which are well described in the prior art. Furthermore, the specification provides an example which illustrates how a nucleotide sequence encoding for trAPAO might be identified and isolated by one skilled in the art (specification, Example 6, pp. 48-51). Thus, given the guidance provided by the specification and the prior art, an individual having ordinary skill in the art would easily be able to practice the invention without a level of undue experimentation.

However, in the interests of furthering prosecution, Applicants have amended claims 1-4, 7, 8, 12-15, 18 and 19, removing reference to 200 contiguous bases and hybridization requirements, thereby alleviating this rejection. Applicants acknowledge that the Examiner has found the Applicant's arguments regarding polynucleotides having at least 90% or 95% sequence identity to SEQ ID NO: 35 and encoding a protein having fumonisin degrading activity to be persuasive, since APAO polynucleotides including polynucleotides that are at least 90% sequence identity to SEQ ID NO: 35, from different sources are disclosed in the specification and

in parent applications 09/352,159 and 09/352,168, now U.S. Patent Nos. 6,211,434 and 6,211,435, respectively.

C. Written Description

Claims 1-8 and 12-19 stand rejected under 35 U.S.C. § 112, first paragraph, for containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The Examiner states that the claims which are drawn to isolated polynucleotides which hybridize to SEQ ID NO: 35 under high stringency conditions and polynucleotides comprising at least 200 contiguous bases of SEQ ID NO: 35, and encoding a protein having fumonisin degrading activity are not adequately described because Applicants have not described representative species of the genus of the claims.

Applicants have amended claims 1-4, 7, 8, 12-15, 18 and 19, removing reference to 200 contiguous bases and hybridization requirements, thereby alleviating this rejection.

III. Conclusion

In light of the above amendments and remarks, Applicants respectfully assert that claims 1-8 and 12-19 are now in condition for allowance. Applicants respectfully request reconsideration and withdrawal of the above rejections. If it is felt that it would aid in prosecution, the Examiner is invited to contact the undersigned at the number indicated to discuss any outstanding issues.

No fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Reconsideration and allowance is respectfully requested.

Respectfully submitted,

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